

REMARKS

Claims 7-18 and 21-26 are now pending in this application. Claims 7-20 are rejected. Claims 19 and 20 are cancelled herein. Claims 1-6 are previously cancelled. New claims 21-26 are added. Claims 7-18 are amended herein to express the invention in alternative wording, to broaden language as deemed appropriate and to address matters of form unrelated to substantive patentability issues.

Applicant herein traverses and respectfully requests reconsideration of the rejection of the claims cited in the above-referenced Office Action.

Claims 7-20 are rejected as obvious over Kishida et al. (US 7,055,955) (presumably in view of Monchalin et al. (US 6,078,397)) under 35 U.S.C. §103(a). Claims 19 and 20 are cancelled herein rendering their rejections moot. The applicant herein respectfully traverses this rejection as pertaining to the remaining claims. For a rejection under 35 U.S.C. §103(a) to be sustained, the differences between the features of the combined references and the present invention must be obvious to one skilled in the art.

As noted above, while the Office Action frames the rejection in light of Kishida et al. alone, the arguments presented by the Examiner rely upon the alleged disclosure of Monchalin et al.. Therefore, applicant assumes for the sake of the present response that the rejections are based upon a combination of these two references, and responds accordingly.

Applicant respectfully submits that the proffered combination of references is improper as it relies upon application of non-analogous art. In particular, it is applicant's position that Kishida et al. and Monchalin et al. are directed to widely divergent fields of endeavor, and that one of ordinary skill in the art seeking to ascertain a thickness of a blood vessel in an eye as a means, for example, of predicting stroke risk, as is one of the objects of the present invention, would not be lead to look to art concerned with the manufacturing of steel tubing, as that to which Monchalin et al. is directed. The drastic dissimilarities of material characteristics between of manufactured steel tubing and blood vessels of for example, the eye, serve to underscore the lack of motivation on the part of the skilled artisan seeking the solution provided by the present invention. A person of ordinary skill in the art simply cannot be expected to contemplate such a combination of documents from such different fields.

Additionally, and notwithstanding a consideration of whether the combination is or isn't appropriate, as argued above, it is the applicant's position that in making such combination, the skilled artisan would nevertheless fail to arrive at the invention as claimed. In this regard, applicant respectfully submits that the teachings of the two cited references are incompatible, and that the suggested combination would fail to result in a functionally operable method or apparatus.

The invention disclosed in Kishida et al., which is directed to an eye fundus examination apparatus relies upon a stationary condition of a blood vessel, i.e., the

blood vessel being observed is not in motion relative to the measurement equipment. In stark contrast, the secondary Monchalin et al reference relies strictly upon the steel tubular “object having motion in two directions.” (See, for example, the abstract). The Examiner offers no explanation as to how one of ordinary skill in the art would apply the reference teachings of Monchalin et al. in a manner modifying Kishida et al. to arrive successfully at an operable invention effective for determining a wall thickness of a blood vessel in an eye, since in order for the invention of Monchalin et al. to be operable, the tube, being equated with a blood vessel by the Examiner, must be moving during measurement. This is in direct opposition to the intended non-moving state of the blood vessel being measured in Kishida et al., and thus the teachings of Kishida et al. teach away from the combination of Monchalin et al. therewith.

In any event, the combined teachings of both Kishida et al. and Mochalin et al. do not teach or suggest the determination of a vascular wall thickness of a blood vessel by determining the difference of the exterior and interior diameter blood vessel as is claimed in independent claim 7.

Furthermore, Monchalin et al. relies upon a laser-ultrasonic system which is used to create and to detect ultrasonic echoes in the tube wall. The time of flight between echoes is determined in order to infer the tube thickness (column 2, lines 1-22, column 4, lines 62-65). While the reference also mentions laser Doppler velocimeters (column 6, line 16-column 7, line 10), the only purpose of these

velocimeters is to detect the displacement of the tube (displacement sub-system 12, Fig. 1, 4, 5). Monchalin et al. does not teach the determination of the exterior diameter of the blood vessel from reflectivity data, as is positively in claims 8-11.

Additionally, applicants wish to call to the Examiner's attention that with regard to the claimed subject matter of dependent claims 9-11 and 15, as well as newly added claims 21-26, while Kishida et al. addresses blood flow velocity measurement (column 3, lines 4-14), the reference clearly fails to teach or suggest the determination of the interior diameter of the blood vessel derived from the Doppler image data of the moving blood column. Monchalin et al. similarly fails to provide anything of this nature, as claimed. The Examiner has entirely failed to address the subject matter of these dependent claims, in light of these additional insufficiencies of the proffered combination of references.

Thus, it is respectfully submitted that the rejected claims are not obvious in view of the cited references for the reasons stated above. Reconsideration of the rejections of claims 7-18 and their allowance are respectfully requested.

Claims 21-26 are added and are submitted as patentable over the cited art of record. Independent claim 21 recites subject matter directed to scanning the blood vessel with a Doppler laser, acquiring reflectivity image data of the blood vessel, acquiring Doppler image data of a moving blood column in the blood vessel, determining an exterior diameter of the blood vessel from the reflectivity image data,

determining an interior diameter of the blood vessel from the Doppler image data of the moving blood column, determining a vascular wall thickness of the blood vessel by determining a difference of the exterior diameter and the interior diameter of the blood vessel which, among other features recited therein, is not believed disclosed in the cited art in the manner as claimed. Dependent claims 22-26 are patentable based on the subject matter recited therein in addition to the subject matter of claim 21.

No fee is believed due. If there is any fee due the USPTO is hereby authorized to charge such fee to Deposit Account No. 10-1250.

In light of the foregoing, the application is now believed to be in proper form
for allowance of all claims and notice to that effect is earnestly solicited.

Respectfully submitted,
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